

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant:	Shau-Lin SHUE, et al.	§	Docket No.:	1998-0615/
		§		24061.286
Serial No.:	10/733,722	§		
		§	Examiner:	Patricia Ann George
Filing Date:	December 11, 2003	§		
		§	Art Unit:	1765
For:	SIDEWALL COVERAGE FOR	§		
	COPPER DAMASCENE	§		
	FILLING	§		

**DECLARATION UNDER 37 C.F.R. § 1.131**

Commissioner of Patents and Trademarks  
Alexandria, VA 22313

Dear Sir:

Shau-Lin Shue, Mei-Yun Wang, Chen-Hua Yu, hereby declare that:

1. We are the co-inventors of the subject matter of the above patent application as therein described and claimed.
2. At all times set forth herein, we were employed as engineers with Taiwan Semiconductor Manufacturing Company, Ltd. ("TSMC"). TSMC is the assignee of the above-identified application.
3. Prior to November 2000, we conceived of the subject matter of the present invention, prepared the attached Invention Disclosure Form (Exhibit A), and submitted them to TSMC for processing for a patent application. Evidence of conception is shown, for example, in the "Points of this invention thought to be novel" section of the invention Disclosure Form, which reads "a soft sputtering is supplemented after seed layer deposition which can produce a wide-opening profile of damascene or via before Cu deposition."
4. Prior to November 2000, TSMC hired the law firm of George O'Saile, to prepare a parent of the above-identified patent application. Then, along with the patent attorneys from George O'Saile, we began to diligently prepare a parent of the above-identified patent application.
5. On July 22, 1999, a parent of the above-identified patent application was filed with the U.S. Patent and Trademark Office. The serial no. of the parent application is 09/358,983.
6. On November 20, 2001, a continuation-in-part (CIP) of the parent application was filed with the U.S. Patent and Trademark Office. The serial no. of the CIP is 11/20/2001.

7. On December 11, 2003, the above-identified patent application, a continuation application of the CIP, was filed with the U.S. Patent and Trademark Office

8. On or about January 27, 2006, the powers of attorney were revoked from George O'Saile, and were appointed to Haynes and Boone, LLP.

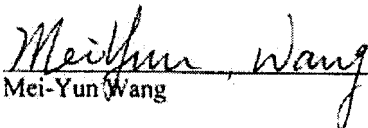
7. At no time were our activities regarding disclosure of our invention in the above-identified patent application ever suspended. We diligently moved toward disclosing our invention by filing the parent application.


8. Based on the foregoing facts, we conceived the above-referenced invention prior to November 2000, and we were diligent in preparing a parent of the above-identified patent application for filing on July 22, 1999.

9. Furthermore, we declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-identified patent application or document or any patent issuing therefrom.

We declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on November \_\_\_\_, 2006.

  
Shau-Lin Shue

  
Mei-Yun Wang

  
Chen-Hua Yu

## Invention Disclosure Form

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<b>General purpose of this invention(English Only) *</b> 發明目的
1.The formation of key hole or seam can be reduced. 2 The electrical performance and reliability of Cu damascene will be improved.
<b>Advantages of this invention (English Only) *</b> 本發明的好處或優點
<b>Points of this invention thought to be novel, list by items. Please identify which elements/steps are must and which elements/steps are optional.(English Only) *</b> 請逐項列舉為達成發明目的所使用的新方法或手段，即，本發明與目前方法的主要不同處，並請指出必要及非必要元件
1.Ar soft sputtering is supplemented after seed layer deposition which can produce a wide-opening profile of damascene or via before Cu deposition. 2.Ar soft sputtered thickness is from 50~300 angstrom.
<b>Detailed description of this invention(English Only) *</b> 發明的詳細敘述，至少需包括一最好的實施例，及/或其他適用於本發明的範例。
<b>Other embodiments/methods/apparatus can be used to achieve the purpose of this invention by a potential infringer(English Only)</b> 其他可實施本發明目的之手段？或其他可用來迴避本發明的範例及做法？
<b>Claim Tree</b>
<b>Attachments/圖形圖另附加檔</b>